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2001P15526US

PATENT APPLICATION  
09/990,844

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### **REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed March 29, 2005. At the time of the Office Action, Claims 1-21 were pending in this Application. Claims 1-7, 11-14, and 16-21 were rejected. Claims 8-10, and 15 were objected to. Claims 1 and 19 have been amended. Applicants respectfully request reconsideration and favorable action in this case.

### **Specification**

Examiner has objected to the disclosure because of informalities. Applicant amended the specification according to the Examiner's suggestions. With respect to the citation of Fig. 9 on page 12, line 3, Applicant amended the specification to refer to Fig. 8 in this paragraph. This paragraph mentions that different solution comparable to the one shown in Fig. 8 are possible, for example, an embodiment with only two equalizers.

### **Rejections under 35 U.S.C. § 112**

Claims 1-4 and 19-21 were rejected by the Examiner under 35 U.S.C. §112. Applicant amended claim 1 to change the term "the calculation" to "path metric calculations." The respective step refers to the exclusion of certain states from subsequent path metric calculations.

With respect to claim 19, Applicant amended this claim to include the limitation of a select unit which was inadvertently omitted.

### **Rejections under 35 U.S.C. § 102**

Claims 5, 6, 7, 11, and 12 were rejected by the Examiner under 35 U.S.C. §102(a) as being anticipated by U.S. Patent 6,813,744 issued to Mario Traeber ("Traeber"). Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

Claims 13 and 19 were rejected by the Examiner under 35 U.S.C. §102(a) as being anticipated by U.S. Patent Application 2003/0056974 ("Pirainen"). Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

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A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1997). Furthermore, "the identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co. Ltd.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Applicant respectfully submits that the cited art as anticipatory by the Examiner cannot anticipate the rejected Claims, because the cited art does not show all the elements of the present Claims.

Traeber merely discloses the general principle of how a trellis calculation is performed. For example, as shown in Fig. 4 of Traeber, each state ( $\gamma_t^{(0)}$ ,  $\gamma_t^{(1)}$ ,  $\gamma_t^{(2)}$ ,  $\gamma_t^{(3)}$ ) is designated as a path metric which is determined from two previous path metrics and the respective two branch metrics which lead to this state and then selecting the survivor path, for example the path with the lowest path metric. This, however, merely means that only one surviving value per state remains for further calculations. Further calculations for each state still have to be made. Traeber merely discloses the normal principle of calculating a trellis as shown in Fig. 4 which still requires calculations for all branches. Traeber specifically discloses that only one surviving path metric ( $\gamma_t^{(0)}$ ,  $\gamma_t^{(1)}$ ,  $\gamma_t^{(2)}$ ,  $\gamma_t^{(3)}$ ) has to be stored for each state.

*"...that path which has the best path metric up to this time is determined for each state and for each time step in the trellis diagram only this path, which is referred to as the survivor path, and its path metric need to be stored"* col. 2, lines 23-27.

Nevertheless, this simply means that one would not store both possible path metrics but only the one that is lower in value (the surviving path metric). See in particular, col. 2, lns. 27-28. Thus, once all four path metrics for a time  $t$  are determined, for the next time  $t+1$ , there still will be eight different branch metrics to be calculated.

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Thus, Traeber is absolutely silent with respect to a reduction of a trellis calculation as claimed in the present independent claims. Throughout the description of Traeber, the system to calculate a trellis always calculates all path metrics as shown in Fig. 4 of Traeber.

On the contrary, the present independent claims include limitations to reduce the amount of calculations in a trellis in a specific way, namely by determining the value of a previous symbol from a sequence of symbols; and then generating a reduced trellis by calculating only path metrics for states in which the previous symbol has the determined value. Thus, certain states are simply omitted and their respective branch metrics need not be determined at all.

With respect to claims 13 and 19, the Examiner stated that Pirainen discloses all the limitations of independent claims 13 and 19. Both claims include the limitations of a "a control unit receiving said sequence of symbols and for determining a power distribution of said sequence of symbols and controlling said select unit depending on said power distribution." The Examiner referred to several paragraphs of Pirainen for allegedly disclosing this limitation. Applicant would like to point out that this limitation specifically includes that a selection of an equalizer is made based upon the power distribution. Applicant searched the specification of Pirainen thoroughly but could neither find the term "power" nor the term "distribution" throughout the whole specification of Pirainen. Pirainen merely discloses to use different equalizer algorithm based on the bit-error-rate before and after decoding. See page 3, paragraph [0042]. Thus, Pirainen neither mentions nor suggests to enhance a decoder system with all the limitations of independent claims 13 or 19.

#### **Rejections under 35 U.S.C. § 103**

Claims 14, 16-18, 20 and 21 were rejected by the Examiner under 35 U.S.C. §102(a) as being unpatentable over Pirainen as applied to claims 13 and 19. Applicant respectfully disagrees. Applicants respectfully submit that the dependent Claims are allowable at least to the extent of the independent Claim to which they refer, respectively. Thus, Applicants respectfully request reconsideration and allowance of the dependent Claims. Applicants reserve the right to make

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further arguments regarding the Examiner's rejections under 35 U.S.C. §103(a), if necessary, and do not concede that the Examiner's proposed combinations are proper.

**Allowable Subject Matter**

Applicants appreciate Examiner's indication that Claims 8-10, and 15 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. However, as explained above, Applicants believe that all claims are allowable over the prior art.

**CONCLUSION**

Applicants have made an earnest effort to place this case in condition for allowance in light of the amendments and remarks set forth above. Applicants respectfully request reconsideration of the claims as amended.

It is believed no fee is due at this time. However, should the Examiner disagree, he is authorized to charge our Deposit Account No. 19-2179. Please also charge this deposit account, at any time during the pendency of this application, for any additional fees required, or credit any overpayment, pursuant to 37 CFR §1.25.

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Respectfully submitted,

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